

Abstract of the Disclosure

A unique design and fabrication process for microwave vacuum tube devices provides such devices on a much smaller scale and with better control of size, spacing, and other parameters than is generally possible with current techniques. In one embodiment, a device substrate comprising a cathode electrode, a grid, and an anode is provided, each attached to the device substrate by one or more flexural members. A mask is placed over portions of the device substrate such that the cathode electrode surface is exposed while other components on the device substrate are covered, and electron emitters are formed on the exposed cathode electrode surface. The mask is then removed, and the cathode, grid, and anode are move, about their flexural members, such that their surfaces are substantially parallel with each other and substantially perpendicular to the device substrate surface.